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ABSTRACT OF THE DISCLOSURE

Improved dip coating methods and mandrels for forming polymer leaflets and valve prostheses generally involve one or more features on the mandrel that facilitate the processing. The mandrel has a top surface and an outer surface comprising a plurality of ridges and contoured surfaces extending to the ridges. An edge on the mandrel separates the top surface and the contoured surfaces, with the mandrel edge corresponding to the free edge of the leaflet. In preferred embodiments, the edge separating the top surface from the contoured surfaces is sharp. The polymer formed on the top surface can be efficiently separated from the remaining portions of the polymer structure to form the free edges of the leaflets.